Message

From: Fennessy, Christopher [christopher.fennessy@Rocket.com]
Sent: 3/28/2019 5:13:00 PM
To: Stralka, Daniel [Stralka.Daniel@epa.gov]; Valerie.Hanley@dtsc.ca.gov
CC: Keller, Lynn [Keller.Lynn@epa.gov]; ROJAS-MICKELSON, DAEWON [rojas-mickelson.daewon@epa.gov]; MacDonald, Alex@Waterboards (Alex.MacDonald@waterboards.ca.gov) [Alex.MacDonald@waterboards.ca.gov]; jim.rohrer@dtsc.ca.gov
Subject: RE: [EXTERNAL] RE: Aerojet Groundwater and Vapor Management Program
Attachments: TCE Layer A.pdf

Thanks Dan! I know you haven't been directly involved in the discussions and I understand your position. What AR is planning on doing is taking action before there is a concern that vapors might be entering the homes. We have been trying to pin down a trigger concentration that is below a concentration at which the Agencies feel on-property sampling would be necessary. I believe, in the absence of a vapor mitigation system, the guidance would suggest that unless the concentration in the sub-slab was above 16ug/m3, indoor air sampling would not be required. We thought that by requiring the installation of vapor mitigation systems before the residents moved in would provide some level of protection IF any vapors were detected in the community. This pre-installed protection would provide the Agencies knowledge that the residents are protected even if the concentration beneath the slab was above 16ug/m3. With this added protection and based upon our past discussions regarding the expected decrease in indoor air concentrations when a passive or active VM system is in place, AR proposed trigger levels that are even conservative based upon our past discussions.

Just for reference, the most recent first water bearing zone TCE plume maps (with associated groundwater monitoring well locations and concentrations) are attached to show the limited extent of TCE in groundwater beneath and anticipated beneath the Glenborough Phases 1-3 development (depicted by red borders). Due to the depositional environment in this area, Layer A is the first water bearing zone on the west side of Glenborough, Layer B is the first water bearing zone in the center of Glenborough, and Layer C is the first water bearing zone on the east side of Glenborough.

Christopher M. Fennessy, P.E.
Aerojet Rocketdyne, Inc.
Engineering Manager, Site Remediation
PO Box 13222
Sacramento, California 95813-6000
Ph: 916-355-3341
Fax: 916-355-6145
Email: Christopher.Fennessy@Rocket.com

From: Stralka, Daniel [mailto:Stralka.Daniel@epa.gov]
Sent: Thursday, March 28, 2019 8:40 AM
To: Fennessy, Christopher; Valerie.Hanley@dtsc.ca.gov
Cc: Keller, Lynn; ROJAS-MICKELSON, DAEWON; MacDonald, Alex@Waterboards (Alex.MacDonald@waterboards.ca.gov); jim.rohrer@dtsc.ca.gov
Subject: [EXTERNAL] RE: Aerojet Groundwater and Vapor Management Program

I am available Friday afternoon EXCEPT 2-3.

The trigger levels are fine. Although, as part of the design/installation, there should be sampling ports in the subslab. If the community trigger levels are hit, there will need to be verification subslab and/or indoors. While disturbance of the residences can be minimized, it is not reasonable to expect that there will be no direct sampling/verification of potenrtial exposure.

From: Fennessy, Christopher <christopher.fennessy@Rocket.com>
Sent: Wednesday, March 27, 2019 9:34 AM
To: Stralka, Daniel <Stralka.Daniel@epa.gov>; Valerie.Hanley@dtsc.ca.gov
Cc: Keller, Lynn <Keller.Lynn@epa.gov>; ROJAS-MICKELSON, DAEWON <rojas-mickelson.daewon@epa.gov>; MacDonald, Alex@Waterboards (Alex.MacDonald@waterboards.ca.gov) <Alex.MacDonald@waterboards.ca.gov>; jim.rohrer@dtsc.ca.gov
Subject: RE: Aerojet Groundwater and Vapor Management Program

Hi Everyone – I am following up on the following e-mail. Can you please provide your availability for a short call during the following days/times:

Today, March 27 1pm-4pm
Thurs, March 28 9am-1200
Thurs, March 28 1pm-4pm
Fri, March 29 9am-1200
Fri, March 29 1pm-4pm

Thanks, Chris

Christopher M. Fennessy, P.E.
Aerojet Rocketdyne, Inc.
Engineering Manager, Site Remediation
PO Box 13222
Sacramento, California 95813-6000
Ph: 916-355-3341
Fax: 916-355-6145
Email: Christopher.Fennessy@Rocket.com

From: Fennessy, Christopher
Sent: Saturday, March 23, 2019 6:06 PM
To: Stralka.Daniel@epa.gov; Valerie.Hanley@dtsc.ca.gov
Cc: Keller, Lynn (Keller.Lynn@epa.gov); rojas-mickelson.daewon@epa.gov; MacDonald, Alex@Waterboards (Alex.MacDonald@waterboards.ca.gov); jim.rohrer@dtsc.ca.gov
Subject: Aerojet Groundwater and Vapor Management Program

Hi Dan and Valerie - During our Technical meeting yesterday, Daewon and Jim suggested I send you some specific information about our plan. We are attempting to pin down the trigger levels that result in an action. Since TCE is the primary COC for VI at Aerojet, this discussion is based upon TCE.

Based upon screening levels, the 10-6 to 10-4 risk management range for TCE in sub-slab samples is 16ug/m3 to 1600ug/m3. However, the hazard index of 1.0 is 70ug/m3, so the decision range is reduced to 16ug/m3 to 70ug/m3. Typically, when the concentration reaches or exceeds this range, an investigation is required to determine if vapor mitigation is necessary.

During the Area 40 vapor mitigation discussions, we concluded that passive vapor mitigation systems provide at least a 1 order of magnitude protection (meaning the sub slab concentration could be between 160-700ug/m3) and an active vapor mitigation system provides at least a 2 order of magnitude protection (meaning the sub slab conce traction could be between 1,600-7,000ug/m3).

In the Glenborough development, all habitable structures will be equipped with passive vapor mitigation systems (minimum requirement is vapor barrier and slotted pipe to vent vapors beneath the slab). This is regardless of TCE concentration in vapor beneath the community.

Prior to occupancy, the vapor mitigation systems will be verified that they were installed correctly (eg smoke test and dP measurements in house and VM system) and functioning as planned. A report will be produced and stamped by a licensed engineer in the State if California.

Aerojet desires to establish a monitoring program that does not require entry onto the owners property after initial construction (eg no sub-slab sampling, no soil vapor sampling, no indoor air sampling).

In order to achieve this, we are proposing the following conservative screening levels as trigger levels:

After sending my last email regarding different scenarios, it sounded like most people are supportive of Scenario 2 (co-located gw and vapor wells). The following proposed trigger levels are based upon Scenario 2.

Concentration of TCE in sentinel goundwater well that triggers installation of co-located downgradient sentinel groundwater wells and sentinel vapor wells (these would be within the community)= 5ug/L

Soil vapor concentration in sentinel vapor wells upgradient of community which triggers installation of vapor wells in community = 16ug/m3

Soil vapor concentration in community vapor well that triggers switching to active = 120ug/m3 (this is below the concentration discussed for Area 40)

Soil vapor concentration in community vapor well that triggers submittal of plan to reduce concentrations of vapors in community = 160ug/m3 (this is an order of magnitude below the concentration discussed for Area 40 that an active vapor mitigation system would allow)

Soil vapor concentration in community vapor well that triggers implementation of plan = 350ug/m3 (although the system would already be active, this concentration is within the range that a passive system is protective, as discussed for Area 40)

Please provide your thoughts on these trigger levels. I would like to schedule a call to discuss your thoughts. Please provide your availability for a 30 min conf call during the following days/times:

Weds, March 27 9am-1200
Weds, March 27 1pm-4pm
Thurs, March 28 9am-1200
Thurs, March 28 1pm-4pm
Fri, March 29 9am-1200
Fri, March 29 1pm-4pm

Thanks! Chris

Sent with BlackBerry Work (www.blackberry.com)